

What is claimed is:

1. A composition for filling a void in an orthopedic joint or between bone separations, the composition comprising:

a polymeric matrix selected from a group consisting of gutta percha, balata,
5 and polyisoprene, and any mixtures thereof; and

a dispersion phase comprising titanium particles less than 50 microns in size;
the composition having a resilient, non-dispersing state at or below body
temperature, and heatable to a fluid state above body temperature, such that the
composition may be injected into the void, thereafter returning to the resilient, non-
10 dispersing state.

2. The composition as defined in claim 1, wherein the titanium particles
are less than 50 percent by weight of the composition.

3. The composition as defined in claim 2, wherein the titanium particles
are at least 1 percent by weight of the composition.

15 4. The composition as defined in claim 1, wherein the titanium particles
comprise from 20 to 50 percent by weight of the composition.

5. The composition as defined in claim 1, wherein the dispersion phase
comprises elongate titanium whiskers.

6. The composition as defined in claim 1, wherein the titanium particles are less than about 20 microns in size.

7. The composition as defined in claim 1, wherein the composition further comprises an additive from a group consisting of a wax and a resin, and any
5 mixtures thereof, to facilitate flow of the composition.

8. The composition as defined in claim 1, further comprising:
a zinc additive up to 10 percent by weight of the composition.

9. The composition as defined in claim 1, wherein the composition is housed in a compressible tube.

10 10. The composition as defined in claim 1, wherein the composition is housed in a syringe.

2 11. A composition for filling a void of an orthopedic joint or between bone separations, the composition having a resilient, non-dispersing state at body temperature, and heatable to a fluid state for injection into the void, the composition comprising:

5 a polymeric matrix selected from a group consisting of gutta percha, balata, and polyisoprene, and any mixtures thereof; and

titanium particles less than 50 microns in size, the titanium particles comprising between 1 and 50 percent by weight of the composition;

the composition having a resilient, non-dispersing state at or below body
10 temperature, and heatable to a fluid state above body temperature, such that the composition may be injected into the void, thereafter returning to the resilient, non-dispersing state.

12. The composition as defined in claim 1, wherein the titanium particles comprise from 20 to 50 percent by weight of the composition.

15 13. The composition as defined in claim 1, wherein the titanium particles comprise elongate titanium whiskers.

14. The composition as defined in claim 1, wherein the titanium particles are less than about 20 microns in size.

15. The composition as defined in claim 1, further comprising:
a zinc additive up to 10 percent by weight of the composition.

16. A method of filling a void in an orthopedic joint or between bone
separations comprising:

5 selecting a polymeric matrix from a group consisting of gutta percha, balata,
and polyisoprene, or any mixture thereof;

selecting titanium particles less than 50 microns in size;

combining the polymeric matrix and the titanium particles to form a composition;

heating the composition to a fluid state above body temperature;

10 injecting the heated composition into the void, such that the composition cools to
body temperature in the resilient, non-dispersing state.

17. The method defined in claim 16, wherein the titanium particles
comprise from 1 to 50 percent by weight of the composition.

18. The method defined in claim 16, wherein the titanium particles
15 comprise elongate titanium whiskers.

19. The method defined in claim 16, further comprising:

including in the composition an additive selected from a group consisting of a wax and a resin, and any mixtures thereof, to facilitate flow of the composition.

20. The method defined in claim 16, wherein the composition is stored in

5 one of a compressible tube and a syringe.